REPORT OF THE SURVEY TO ASCERTAIN THE LEVEL OF COMPUTERIZATION INITIATIVES OF LOCAL GOVERNMENT UNITS

GOVERNANCE AND LOCAL DEMOCRACY PROJECT

A Project of the Government of the Republic of the Philippines
Assisted by the United States Agency for International Development
Through the
Associates in Rural Development, Inc.
Under Contract with USAID/Philippines
Terms of Contract No. 492-0471-C-C00-5089-00

This 1999 survey to Ascertain the Level of Computerization Initiatives of Local Government Units (LGUs) was administered by the Associates in Rural Development (ARD), in partnership with the Philippine Business for Social Progress and the Leagues of Provinces, Cities and Municipalities, and made possible through the support provided by the United States Agency for International Development (USAID) under the Terms of Contract No. 492-0471-C-C00-5089-00 for the Governance and Local Democracy (GOLD) Project. The views, findings, and statements contained in the report and survey results are those of the consultants and local government units and they are not intended as statements of policy or fact of USAID

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I. INTRODUCTION

The ARD/GOLD Project, in partnership with the Philippine Business for Social Progress, and the Leagues of Provinces, Cities and Municipalities, initiated the conduct of a nationwide survey of local government units to ascertain the level of their initiatives in selected areas of computerization. The areas covered were:

- Computer hardware and related equipment;
- Local Area Network;
- Access to the Internet;
- Use of application/productivity software;
- Application systems development and implementation;
- Extent of systems integration;
- Information Technology organization and personnel;
- Information systems planning and Information Technology investment; and
- Perceived obstacles to Information Technology Implementation

Copies of the questionnaire were sent to LGUs starting in June 1999. The initial survey plan sought to cover a target population of 78 provinces, 83 cities, and 78 capital municipalities.

The responding LGUs started sending in their accomplished questionnaire by July, and these were tabulated as they came in. The return of the questionnaire came at a rate that was slower, although bigger, than expected. By October, the last questionnaire from the provinces, cities and capital municipalities finally returned. The final count showed 46 provinces and 36 cities responding (refer to Annex A – Table 13). Unfortunately, the number of capital municipalities responding fell far too short of what was deemed significant, which warranted narrowing the coverage to provinces and cities only.

The support provided by the Leagues of Provinces and Cities, through their respective Presidents and staff, helped in getting a relatively good turnout.

Section II discusses the methodology used in the survey. The highlights of the results of the statistical analysis for all Local Government Units, Provinces and Cities are shown in Section III. The highlights of the results and conclusion are presented in Section IV. For details and reference, the complete tables are included in the appendix.

II. METHODOLOGY

A team composed of ARD/GOLD consultants, PBSP/GOLD staff and representatives from the Leagues prepared the user-friendly structured questionnaire. It was administered by mail (using courier service) and fax machine, with a cover letter signed by the respective Presidents of the Leagues. The accomplished questionnaires were either mailed or faxed over separately to the Leagues offices. An ARD/GOLD consultant coordinated the activities and led the Leagues staff in tabulating the results. For analysis, the data was encoded and processed through the use of the Statistical Package for the Social Sciences or SPSS.

III. ANALYSIS

A. PROVINCE

For the provinces, the original survey plan has set a target population of 78 provinces. The final count of the local government units who responded showed a total of 46 provinces. This shows that the return of respondents for the provinces is 59 % indicating the representativeness of the sample from the target population.

1. Computer Hardware and Related Equipment

Based from the data obtained in the provincial level, 100 % or all of the respondents from the provinces sampled have computers and related equipment in the office. And with this result, most of LGU respondents still use pre-Pentium processors compared to Pentium processors.

Out of the 46 LGU respondents who have computers in their office, 78 % are using 80486, 63 % are using 80386 and 39 % are using 80286 processors. For the Pentium users, 85 % of the LGU respondents use Pentium I, followed by Pentium II with 65 % and 9 % for Pentium III.

For the LGU respondents from the provinces, it is evident that most of them use other peripherals compared to special machines in the office. For provinces, 78 % of the LGU respondents have telephone lines, 76 % have fax machines, 64 % have scanners, and 63 % have modems. And for the special machines used, 5 % of the LGU respondents have minicomputers, 4 % have cash registers and 4 % have other special machines.

2. Local Area Network

Out of the 46 respondents, 50 % have no Local Network facility installed in the office while only 46 % have Local Network facility installed.

Given the 21 provinces that operate in a Local Area Network (LAN) environment, both the Microsoft NT server and Microsoft Windows are mostly used as operating system with 52 % compared to the Novell NetWare with 59 %. The Unix, Linux2 and other operating systems are deemed insignificant.

For the type of server used in the provinces, 52 % of the local government units who responded use Pentium I, followed by Pentium II with 38 % while only 14 % use below Pentium server. Only 10 % of the LGUs use Pentium III and other type of server.

For the type of network topology installed in the office, 48 % of the LGUs who responded installed Star Topology then Bus Topology with 19 % and 10 % installed the Token Ring. As for the network technology installed in the local government units offices, both the Fast Ethernet (100Mbps) and Ethernet (10Mbps) technology are

installed each with 38 % while both Giga Ethernet (1000Mbps) and Fiber Distributed Data Interface each have only 5 %.

Access to the Internet

Out of the 46 LGUs respondents who have computers in the office, 59 % have Internet access while 35 % have no Internet access.

There are four main reasons for using the internet but out of the 27 LGU subscribers of the internet in the provinces, 78 % of the LGUs who responded use the internet for emails/communications purposes, this is followed by research with 70 % and lastly both chat forms and discussion list have 11 % each.

3. Use of Application / Productivity Software

For Word Processing, the type of application software which is mostly used by the LGUs is the Microsoft Word with 96 %, this is followed by the use of WordStar with 57 %, then Word Perfect with 41 % and lastly with Ami Pro with 4 %.

For Spreadsheet, 98 % of the LGUs use Microsoft Excel while 63 % still uses Lotus 123. Other applications for spreadsheet such as Lotus Pro and Qpro got 22 % and 7 % respectively.

For Presentation, Microsoft PowerPoint is the application software mostly used by 83 % of the LGUs who responded, while 15 % use FreeLance. Other presentation software such as Corel Draw is used by only 2 % of the LGUs.

For Desktop Publishing, 63 % of the LGUs in the provinces use PageMaker, 59 % use Corel Draw, 46 % uses Adobe. Both the PhotoShop and Microsoft Publisher are used by each of the 37 % of the LGU respondents. The other applications for desktop publishing are insignificant.

For Operating System, 94 % of the LGUs use Windows 95, followed by Windows 98 with 72 % of the LGU respondents, then MS-DOS with 57 %. Other operating system used in the provinces includes Windows 3.1, Windows 3.11 and Windows 3.0 with 52 %, 46 % and 15 % respectively.

4. Application Systems Development and Implementation

Out of the 46 respondents from the LGUs in the provinces, 52 % have application systems installed in the office while only 39 % have no application systems.

APPLICATION SYSTEMS DEVELOPMENT AND IMPLEMENTATION (PROVINCE)

LGU APPLICATION SYSTEMS BEING USED	**PERCENTAGES**
Payroll System	38
Personnel Management Info System	33
Real Property Tax Assessment System	29

LGU APPLICATION SYSTEMS ON-GOING DEVELOPMENT	**PERCENTAGES**
Accounting System	29
Real Property Tax Assessment System	21
Budget Monitoring System	21
Personnel Management Info System	21

LGU APPLICATION SYSTEMS ON-GOING DATA BUILD-UP	**PERCENTAGES**
Budget Monitoring System	8

LGU APPLICATION SYSTEMS COMPLETED BUT NOT BEING USED	**PERCENTAGES**
Real Property Tax Assessment System	8

LGU APPLICATION SYSTEMS INCOMPLETE	**PERCENTAGES**
Cash Collection System	8

LGU APPLICATION SYSTEMS PLANNING TO DEVELOP	**PERCENTAGES**
Programs & Project Monitoring System	42
Supplies & Inventory Control System	42
Property Management Information System	38

LGU APPLICATION SYSTEMS NO PLANS BUT WOULD LIKE ASSISTANCE	**PERCENTAGES**
Public Safety Monitoring System	21
Hospital Info System	17

5. Extent of Systems Integration

Only a handful of local government units in the provinces have their systems linked with other systems. Out of the 46 LGUs with computers in their office, only 17 % have their systems linked with other systems and the other 46 % have no links with other systems.

Among the systems linked, 88 % of the LGU respondents have links between Personnel Information System & Payroll System, 75 % have links between Real Property Tax Assessment System & Billing System, 63 % have links between Budget Monitoring System & Accounting System, and 50 % have links between Treasury System & Accounting System.

The other systems linked such as the Revenue Generating System & Treasury System, Property Monitoring System & Accounting System and RPTAS & Geographical Information System are used by 38 %, 25 % and 13 % of the LGU respondents respectively.

6. Information Technology Organization and Personnel

Out of the 46 LGU respondents, only 30 % have Department-level IT organization. For the Division-level IT organization they only have 20 % while 11 % have the section level.

Out of the 46 LGU respondents, 37 % of the LGUs have Data Encoders, 35 % have Computer Operators, and 24 % have Programmers. Other IT personnel such as Computer Technician, IT Officer, Systems Analyst, and LAN Administration have 17 %, 15 %, 13 %, 11 % respectively.

7. Perceived Obstacles to Information Technology Implementation

Based from the data gathered, 67 % of the LGU respondents viewed Inadequate Funds as the biggest hindrance to IT implementation. This is followed by Lack of Technical Capability with 48 % while 41 % of the LGUs viewed Obsolete Machines as an obstacle to IT implementation.

Aside from the top three hindrances to IT implementation, there are other obstacles perceived by the local government units. The other hindrances are as follows, 24 % of the LGUs view Unreliable Power Supply, then both Low Priority & Lack of Appreciation among Decision Makers each have 20 % while both Resistance of LGU Personnel & Lack of Telecommunications each have 13 %. The rest are insignificant.

APPLICATION SYSTEMS DEVELOPMENT AND IMPLEMENTATION

(PROVINCE)

SYSTEMS	LEVEL OF IMPLEMENTATION							
	BEING USED	ON-GOING DEVELOPMENT	ON-GOING DATA BUILD-UP	COMPLETED NOT USED	INCOMPLETE	PLANNING TO DEVELOP	NO PLANS BUT LIKE ASSISTANCE	NO INTEREST
Real Property Tax Assessment System	29	21	4	8	4	25	4	
Real Property Tax Billing System	13	17	4	4	4	17	8	
Busines Permit & License System	4	13	4	4		21	4	4
Miscellaneous Tax & Fees System		4			4	17	8	
Market Administration System	4					8	4	4
Occupational Permit System					4	13	8	4
Governor's/Mayor's Permit System	4	4				17	13	
Cash Collection System	8	13			8	25	13	
Cash Management System	4	17		4	4	21	8	
Accounting System	17	29	4	4		21	13	
Budget Monitoring System	8	21	8			33	8	
Investment Monitoring System		4				21	8	4
IRA Funds Alloc. Monitoring System		8		4		25	8	
Personnel Management Info System	33	21	4			25	8	
Payroll System	38	17	4	4		17	8	
Remittance System	21	4				25	4	
Building Permit Monitoring System						17	8	4
Engr'g Equipment Monitoring System	4	8		4		25	8	
Programs & Project Monitoring System		13		4		42	13	
Quarry & Mining Permit System		8		4		21	8	
Property Management Information System	8	13	4			38	13	
Supplies & Inv. Control System	21			4		42	8	
Document Tracking System	8	4		4		29	8	
Tricycle Operations System						8	13	4
Public Safety Monitoring System						17	21	
Hospital Info System	4	8				29	17	
Legislative Info System	8	4			4	25	13	
Local Civil Registry System						17	13	4
Local Government Statistics Info Systems		4				29	8	4
Public Information System		4				33	8	
Executive Information System		4				33	13	

TABLE II. Matrix for LGU Application System and Level of Implementation for Provinces

Note:

*all values are percentages

*total of 46 LGU respondents from the provinces

B. CITIES

For the cities, the target population that was set is 83 LGU respondents. Out of the 83 LGU respondents expected, 36 sent in their response. The return of respondents for the cities is 43 %.

1. Computer hardware and related equipment

From the data that was gathered on 36 cities, 97 % of the LGU respondents have computers and related equipment in the office while only 3 % have no computer or related equipment in the office. Though it seems that almost all the LGU in the cities have computers most of the respondents still uses pre-Pentium processors compared to Pentium processors.

Out of the 35 LGU respondents in the cities who have computers in the office, 89 % of these respondents use 80486 processors, 74 % use 80386 processors and 31 % use 80286 processors. For the Pentium users, 86 % of the LGUs use Pentium I, 71 % use Pentium II and 11 % Pentium III.

Very few use other office equipment and special machines. Only 14 % out of the 35 respondents have mini computers while 3 % have cash register. The LGUs that have touch screens are deemed insignificant. For other peripherals used in the office, 86 % out of the 35 LGU respondents each has Modems and Fax Machines. On the other hand, 80 % of the LGUs have telephone lines while 77 % have scanners.

2. Local Area Network

Out of the 35 LGU respondents who have computers in the office, 58 % operate in a Local Area Network (LAN) environment while the remaining 39 % of the LGUs use stand-alone computers.

From the 21 LGUs that have local network facility installed in the office, 57 % use Microsoft NT server as operating system, while 33 % of the LGUs use either the Novell NetWare or the Microsoft Windows as operating system. The Unix, Linux, and AIX each got 5 % share out of the 21 LGUs.

For the server type used in the city LGUs, 48 % out of the 21 LGUs operating in a LAN environment use Pentium II, followed by Pentium I with 38 % and Below Pentium with 10 %.

For the type of network topology installed in the office, 62 % of the LGU respondents use Star topology, 24 % use Bus Topology and 5 % use the Token Ring. As for the network technology installed in the office, 43 % use Ethernet (10Mbps) while 38 % use Fast Ethernet (100Mbps).

3. Access to the Internet

LGUs subscribing to the Internet comprises 64 % of the total respondents. Only 36 % remain unconnected to the web.

Out of the 23 city LGUs subscribing to the Internet, 96 % use the Internet either for Research or for email purposes. Chat Forms and Discussion List each received 13 % and 17 % respectively.

4. Use of Application / Productivity Software

The type of application software used for Word Processing is the Microsoft Word. Out of the 35 city LGUs with computers, all use the Microsoft Word for Word Processing; this is followed by the WordStar with 61 %, while only 28 % of the LGUs use WordPerfect, others are insignificant.

For Spreadsheets, 94 % out of the 35 computer users in the city LGUs use Microsoft Excel, while 61 % use Lotus 123. Only 14 % of the LGUs use the Lotus Pro.

Only two types of application software for Presentation are being used in the city LGUs. Out of the total LGU respondents, 86 % uses Microsoft PowerPoint while only 6 % use freelance.

For Desktop Publishing, the most frequent type of application software being used is the Corel Draw with 64 %. Second to Corel Draw is the PageMaker with 50 %, followed by the PhotoShop with 39 %. The Microsoft Publisher is used by 33 % of the LGU respondents while 25 % of the LGUs use Adobe.

The most frequent type of application software used as operating system is the Windows 95 with 94 % of the total LGU respondents. Meanwhile, 67 % use Windows 98 followed by MS-DOS with 64 %. Windows 3.1 and Windows 3.11 each got 44 % and 33 % respectively.

5. Application Systems Development and Implementation

Out of the 36 respondents from the LGUs in the cities sampled, 83 % have application systems installed in the office while only 14 % have no application systems.

APPLICATION SYSTEMS DEVELOPMENT AND IMPLEMENTATION (CITY)

LGU APPLICATION SYSTEMS BEING USED	**PERCENTAGES**
Local Civil Registry System	50
Real Property Tax Assessment System	30
Payroll System	23
Business Permit & License System	20

LGU APPLICATION SYSTEMS ON-GOING DEVELOPMENT	**PERCENTAGES**
Real Property Tax Billing System	17
Business Permit & License System	17
Personnel Management Info System	17

LGU APPLICATION SYSTEMS ON-GOING DATA BUILD-UP	**PERCENTAGES**
Real Property Tax Assessment System	13
Real Property Tax Billing System	13
Local Civil Registry System	13
LGU APPLICATION SYSTEMS COMPLETED BUT NOT BEING USED	**PERCENTAGES**
Budget Monitoring System	3
Payroll System	3
Property Management Information System	3
Supplies & Inventory Control System	3

LGU APPLICATION SYSTEMS INCOMPLETE	**PERCENTAGES**
Real Property Tax Assessment System	17
Personnel Management Info System	10
Business Permit & License System	7

LGU APPLICATION SYSTEMS PLANNING TO DEVELOP	**PERCENTAGES**
Cash Management System	37
Property Management Information System	37
Supplies & Inventory System	37

LGU APPLICATION SYSTEMS NO PLANS BUT WOULD LIKE ASSISTANCE	PERCENTAGES
Remittance System	17
Quarry & Mining Permit System	17
Public Safety Monitoring System	17

LGU APPLICATION SYSTEMS NO INTEREST	PERCENTAGES
Engineering Equipment Monitoring System	3
Quarry & Mining Permit System	3
Hospital Info System	3

6. Extent of Systems Integration

There are more systems that are not linked with other systems in the city LGUs. Out of the 35 city LGU respondents, only 31 % have their systems linked with other systems in the office while 61 % are not linked with other systems.

Out of the 11 LGU that have their systems linked with other systems, 91 % have links between Real Property Tax Assessment System (RPTAS) and Billing System. Meanwhile, 36 % of the total LGUs have links either on Revenue Generating System and Treasury System (Cash Collection System, Cash Management System) or Personnel Information System and Payroll System.

On the other hand, 27 % have links between RPTAS and Geographical Information System. And only 18 % of the LGUs have links either on Treasury System and Accounting System or Budget Monitoring System (BMS) and Accounting System.

7. Information Technology Organization and Personnel

In the city LGUs, 47 % have Department-level IT organization, 28 % have Division-level IT organization, and 11 % have Section-level IT organization.

Out of the 35 LGU respondents, 39 % of the LGUs have Computer Operators, 36 % have Programmers, 31 % have Data Encoders, and 25 % have Information Technology Officer. Only 22 % of the LGUs have either Systems Analyst or Computer Technician.

8. Perceived Obstacles to Information Technology Implementation

The top three obstacles to Information Technology Implementation perceived by the city LGUs are Inadequate Funds with 67 %, followed by Lack of Technical Capability with 53 % and Low Priority with 33 %.

On the low end, out of the 35 computer users in the city LGUs, 28 % think that Obsolete Machines are hindrances to IT implementation, second to this is Lack of Appreciation among Decision Makers with 25 %, 14 % goes to both Resistance to LGU Personnel and Unreliable Power Supply. And lastly 8 % of the LGUs perceived Lack of Telecommunications as a hindrance to IT implementation.

APPLICATION SYSTEMS DEVELOPMENT AND IMPLEMENTATION

(CITIES)

SYSTEMS	LEVEL OF IMPLEMENTATION							
	BEING USED	ON-GOING DEVELOPMENT	ON-GOING DATA BUILD-UP	COMPLETED NOT USED	INCOMPLETE	PLANNING TO DEVELOP	NO PLANS BUT LIKE ASSISTANCE	NO INTEREST
Real Property Tax Assessment System	30	13	13		17	23		
Real Property Tax Billing System	17	17	13		3	30	3	
Busines Permit & License System	20	17			7	30		
Miscellaneous Tax & Fees System		7				30	7	
Market Administration System	3	3	3		3	33	10	
Occupational Permit System	3	3	3			27	10	
Governor's/Mayor's Permit System	10	7				33	7	
Cash Collection System		7			3	33	3	
Cash Management System	3	7				37		
Accounting System	10	13	3		3	33		
Budget Monitoring System	7	7		3	3	33		
Investment Monitoring System	3					33	10	
IRA Funds Alloc. Monitoring System						30	10	
Personnel Management Info System	17	17			10	30	3	
Payroll System	23	13		3	3	30	3	
Remittance System	7		3			23	17	
Building Permit Monitoring System	3		3			33	7	
Engr'g Equipment Monitoring System						27	13	3
Programs & Project Monitoring System	7					33	10	
Quarry & Mining Permit System						23	17	3
Property Management Information System	3	3	3	3	3	37	3	
Supplies & Inv. Control System		3		3		37	3	
Document Tracking System	3	3			3	27	10	
Tricycle Operations System	7	3	3			27	13	
Public Safety Monitoring System						23	17	
Hospital Info System						30	7	3
Legislative Info System	10	3			3	33	3	
Local Civil Registry System	50	13	13		3	17		
Local Government Statistics Info Systems	7		7			30	13	
Public Information System	3					33	10	
Executive Information System		3			3	33	3	

TABLE III. Matrix for LGU Application System and Level of Implementation for Cities

Note:
*all values are percentages
*total of 36 LGU respondents from the cities

IV. HIGHLIGHTS OF FINDINGS

A. Computer Hardware and Related Equipment

Out of the 82 provinces and cities that responded almost all the government units have computers and related equipment in the office. However, more local government units are still using pre-Pentium processors such as 80286, 80386 and 80486 compared to those who use Pentium processors.

Out of the 81 users of computers, other peripherals such as scanners, modem, fax machine and telephone lines are mostly used in the local government units compared to the special machines such as minicomputers, cash registers and touch screens.

B. Local Area Network

More than half of the total LGU respondents operates in a Local Area Network (LAN) environment. The remaining LGUs use stand-alone computers.

Out of the 51% LGU respondents who operate in a LAN environment, the network operating system, which is used by most LGU respondents, is the Microsoft NT server followed by the Novell NetWare. The type of server used is mostly Pentium I followed by Pentium II. The type of network topology installed in most LGUs is the Star Topology while the type of network technology mostly used is the Ethernet (10Mbps).

C. Internet Subscriber

More than half of the LGU respondents subscribes to the Internet. More than 80% of the respondents use the Internet for Emails and Research and very few only access the Internet for chat forms and discussion list

D. Application / Productivity Software

Application or productivity software is the most common tool used by all the respondents. All provinces and cities use word processors and spreadsheets as office productivity tools.

For Word Processing, more than 95 % of all LGUs use Microsoft Word followed by the use of WordStar. For Spreadsheets, more than 95 % of all LGUs use Microsoft Excel followed by the use of Lotus 123. For Presentation purposes, more than 60 % use Microsoft PowerPoint. For Desktop Publishing, more than 75 % use Corel Draw, followed by the PageMaker with 57 %. As for the Operating System, more than 90 % of all LGU respondents use Windows 95 while 69 % use Windows 98.

E. Application Systems

APPLICATION SYSTEMS DEVELOPMENT AND IMPLEMENTATION (ALL LOCAL GOVERNMENT UNITS)

LGU APPLICATION SYSTEMS BEING USED	PERCENTAGES
Real Property Tax Assessment System	30
Payroll System	30
Local Civil Registry System	28
Personnel Management Info System	24

LGU APPLICATION SYSTEMS ON-GOING DEVELOPMENT	PERCENTAGES
Accounting System	20
Personnel Management Info System	19
Real Property Tax Assessment System	17
Real Property Tax Billing System	17

LGU APPLICATION SYSTEMS ON-GOING DATA BUILD-UP	PERCENTAGES
Real Property Tax Assessment System	9
Real Property Tax Billing System	9
Local Civil Registry System	7

LGU APPLICATION SYSTEMS COMPLETED BUT NOT BEING USED	PERCENTAGES
Budget Monitoring System	6
Real Property Tax Assessment System	4
Payroll System	4
Supplies & Inventory Control System	4

LGU APPLICATION SYSTEMS INCOMPLETE	PERCENTAGES
Real Property Tax Assessment System	11
Cash Collection System	6
Personnel Management Info System	6

LGU APPLICATION SYSTEMS PLANNING TO DEVELOP	PERCENTAGES
Supplies & Inventory Control System	39
Programs & Project Monitoring System	37
Property Management Information System	37

LGU APPLICATION SYSTEMS NO PLANS BUT WOULD LIKE ASSISTANCE	PERCENTAGES
Public Safety Monitoring System	19
Quarry & Mining Permit System	13
Tricycle Operations System	13

F. Integration

Very few of the application systems are linked with each other. More than 50 % are not linked with other systems while only 23 % are linked.

Among the systems linked with other system, 84 % goes to the Real Property Tax Assessment System (RPTAS) linked with Billing System. This is followed by the Personnel Information System linked with the Payroll System with 58 %. Only 37 % go to both the Revenue Generating System linked with Treasury System (Cash Collection System, Cash Management System) and Budget Monitoring System (BMS) linked with Accounting System.

G. Information Technology Organization and Personnel

Out of the 82 LGU respondents, only 38 % have department-level IT organizations. For the division-level IT organizations they only have 23 % while 11 % have the section level.

Out of the 82 LGU respondents, 37 % have Computer Operators, 34 % have Data Encoders and 30 % have Programmers.

H. Challenges to Information Technology Implementation

Based from the data gathered, the top three obstacles to IT implementation are Inadequate Funds, with 67%, this was followed by Lack of Technical Capability with 50 % while 35 % goes to Obsolete Machines.

The other obstacles for IT implementation are , 26 % for Low Priority, 22 % for Lack of appreciation among decision makers, 20 % for Unreliable power supply. On the low end, 13 % of the total LGU respondents say that Resistance of LGU personnel is an obstacle while only 11 % said that Lack of telecommunication facilities, and the rest is insignificant.